

Claims 110-119 have been added to more distinctly claim and particularly point out the subject matter of the invention. Claims 69-96 have been canceled without prejudice.

Support for the amendment to Claim 1 and for the newly added claims can be found throughout the instant Specification including in the original claims. Further support for newly added Claim 110 can be found on Page 35, lines 7-9, and on Page 71 lines 6-8 of the original Specification. Additional support for newly added Claims 111 and 112 can be found on Page 42, lines 11-15, on Page 48, lines 26-27, and Page 64, lines 19-23 of the original Specification. Further support for newly added Claims 113-119 can be found on Page 72, lines 21-27 of the original Specification. Claims 1 and 97-119 remain for consideration. No new matter has been entered.

RESPONSE TO RESTRICTION REQUIREMENT

The Examiner has required that the Applicants select amino acid sequences for a single Stat protein, grouped as STAT 1, STAT2, STAT3 or STAT4, since the Examiner asserts, each Stat protein group differs in structure, function and in biological activity. The Examiner has further required the election of a single amino acid sequence in the selected Group.

In response to the Restriction Requirement, the Applicants select the Group corresponding to the STAT3 protein with traverse.

In response to the species election requirement, the Applicants elect the amino acid sequence of SEQ ID NO:12 without traverse. Claims 1, 97, and 108-119 read on the elected species.

Though the Applicants agree with the Examiner that the different Stat proteins are patentably distinct, the Applicants respectfully request reconsideration of the Requirement for Restriction, or in the alternative, modification of the Restriction Requirement to allow prosecution of more than one Stat protein.

Under 35 U.S.C. §121 "two or more independent and distinct inventions ... in one Application may ... be restricted to one of the inventions." Inventions are "'independent'" if "there is no disclosed relationship between the two or more subjects disclosed" (MPEP 802.01). The term "'distinct'" means that "two or more subjects as disclosed are related ...

but are capable of separate manufacture, use or sale as claimed, AND ARE PATENTABLE OVER EACH OTHER" (MPEP 802.01) (emphasis in original). However, even with patentably distinct inventions, restriction is not required unless one of the following reasons appear (MPEP 808.02):

1. Separate classification
2. Separate status in the art; or
3. Different field of search.

Further, under Patent Office Examining Procedures, "[i]f the Search and Examination of an entire Application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to distinct or independent inventions" (MPEP 803, Rev. 8, May 1988) (emphasis added).

Applicants respectfully submit that the groups designated by the Examiner though patentably distinct fail to define compositions with properties so distinct as to warrant separate Examination and Search. The search for any of the STAT proteins would require an additional search of the **identical** classes wherein the other STAT proteins are classified, thus resulting in a duplicate search for the same material. Thus, Applicants submit that the Search and Examination of the entire Application can be made without serious burden, and therefore the Examiner must examine all of the claims of the Application on the merits.

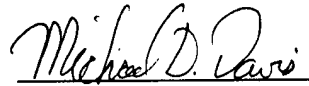
From the above and foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

Attached hereto is a marked up version of the changes made to the Specification and claims by the current amendment. The attached page is captioned "Version with marking to show changes made."

No additional fees are believed to be necessitated by the foregoing amendments. However, should this be erroneous, authorization is hereby given to charge Deposit Account No. 11-1153 for any underpayment, or credit any overages.

In the event that there are any questions concerning this Amendment, or the application in general, the Examiner is respectfully urged to telephone the undersigned so that prosecution of the application may be expedited.

Respectfully submitted,

A handwritten signature in cursive script, reading "Michael D. Davis", is written over a horizontal line.

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“VERSION WITH MARKING TO SHOW CHANGES MADE.”

IN THE SPECIFICATION:

The paragraph that bridges Page 8 to Page 9 has been amended as follows:

The present invention also relates to a recombinant DNA molecule or cloned gene, or a degenerate variant thereof, which encodes a receptor recognition factor, or a fragment thereof, that possesses a molecular weight of about 113 kD and an amino acid sequence set forth in FIGURE 1 (SEQ ID NO:2); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding the 113 kD receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 1 (SEQ ID NO:1). In another embodiment, the receptor recognition factor has a molecular weight of about 91 kD and the amino acid sequence set forth in FIGURE 2 (SEQ ID NO:4) or FIGURE 13 (SEQ ID NO:8); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding the 91 kD receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 2 (SEQ ID NO:3) or FIGURE 13 (SEQ ID NO:8 7). In yet a further embodiment, the receptor recognition factor has a molecular weight of about 84 kD and the amino acid sequence set forth in FIGURE 3 (SEQ ID NO:6); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding the 84 kD receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 3 (SEQ ID NO:5). In yet another embodiment, the receptor recognition factor has an amino acid sequence set forth in FIGURE 14 (SEQ ID NO:10); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding such receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 14 (SEQ ID NO:9). In still another embodiment, the receptor recognition factor has an amino acid sequence set forth in FIGURE 15 (SEQ ID NO:12); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding such receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 15 (SEQ ID NO:11).

The paragraph that bridges Page 37 to Page 38 has been amended as follows:

As stated above, the present invention also relates to a recombinant DNA molecule or cloned gene, or a degenerate variant thereof, which encodes a receptor recognition factor, or a fragment thereof, that possesses a molecular weight of about 113 kD and an amino acid sequence set forth in FIGURE 1 (SEQ ID NO:2); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding the 113 kD receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 1 (SEQ ID NO:1). In another embodiment, the receptor recognition factor has a molecular weight of about 91 kD and the amino acid sequence set forth in FIGURE 2 (SEQ ID NO:4) or FIGURE 13 (SEQ ID NO:8); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding the 91 kD receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 2 (SEQ ID NO:3) or FIGURE 13 (SEQ ID NO:8). In yet a further embodiment, the receptor recognition factor has a molecular weight of about 84 kD and the amino acid sequence set forth in FIGURE 3 (SEQ ID NO:6); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding the 84 kD receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 3 (SEQ ID NO:5). In yet another embodiment, the receptor recognition factor has an amino acid sequence set forth in FIGURE 14 (SEQ ID NO:10); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding such receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 14 (SEQ ID NO:9). In still another embodiment, the receptor recognition factor has an amino acid sequence set forth in FIGURE 15 (SEQ ID NO:12); preferably a nucleic acid molecule, in particular a recombinant DNA molecule or cloned gene, encoding such receptor recognition factor has a nucleotide sequence or is complementary to a DNA sequence shown in FIGURE 15 (SEQ ID NO:11).

IN THE CLAIMS:

Claims 69-96 have been canceled without prejudice.

Claim 1 has been amended as follows:

1. (Twice Amended) An isolated receptor recognition factor (RRF), Stat3, implicated in the transcriptional stimulation of genes in target cells in response to the binding of a specific polypeptide ligand to its cellular receptor on said target cell, wherein said receptor recognition factor is a polypeptide having an the amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, and of SEQ ID NO:12.

Claims 110-119 have been added.

PENDING CLAIMS

1. (Twice Amended) An isolated receptor recognition factor (RRF), Stat3, having the amino acid sequence of SEQ ID NO:12.

97. An isolated receptor recognition factor (RRF) that has the following characteristics:

- (a) it is cytoplasmic in origin;
- (b) it is activated by tyrosine phosphorylation; and
- (c) upon activation the RRF is translocated to the nucleus of a target cell; and

wherein the RRF is encoded by a recombinant DNA molecule that hybridizes under standard hybridization conditions of 5X SSC and 65 °C to a nucleic acid complementary to a DNA sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, and SEQ ID NO:11.

98. The isolated RRF of Claim 97 wherein the RRF is encoded by a nucleic acid complementary to the DNA sequence of SEQ ID NO:3.

99. The isolated RRF of Claim 98 that has the amino acid sequence of SEQ ID NO:4

100. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:1.

101. The isolated RRF of Claim 100 that has the amino acid sequence of SEQ ID NO:2

102. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:5.

103. The isolated RRF of Claim 102 that has the amino acid sequence of SEQ ID NO:6

104. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:7.

105. The isolated RRF of Claim 104 that has the amino acid sequence of SEQ ID NO:8
106. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:9.
107. The isolated RRF of Claim 106 that has the amino acid sequence of SEQ ID NO:10.
108. The isolated RRF of Claim 97 wherein the nucleic acid is complementary to the DNA sequence of SEQ ID NO:11.
109. The isolated RRF of Claim 108 that has the amino acid sequence of SEQ ID NO:12.
110. An isolated receptor recognition factor (RRF) encoded by a recombinant DNA, wherein the recombinant DNA molecule hybridizes under standard hybridization conditions of 5X SSC and 65°C to a nucleic acid complementary to the nucleotide sequence of SEQ ID NO:11; wherein said RRF comprises a tyrosyl residue that is phosphorylated when said polypeptide is expressed in a cell treated with IL-6; wherein when said cell expresses a protein having the amino acid sequence of SEQ ID NO:12 said protein is phosphorylated in response to IL-6 treatment.
111. An immunogenic fragment of an isolated receptor recognition factor (RRF), Stat3, having the amino acid sequence of SEQ ID NO:12.
112. A fusion protein comprising the immunogenic fragment of Claim 111.
113. The fusion protein of Claim 112 which further comprises GST.
114. An isolated fragment of a recognition factor (RRF) comprising 40 amino acids of SEQ ID NO:12.
115. The isolated fragment of Claim 114 wherein the 40 amino acids of SEQ ID NO:12 are amino acids 688 to 727.

- 116. A fusion protein comprising the isolated fragment of Claim 115.
- 117. The fusion protein of Claim 116 which further comprises GST.
- 118. A fusion protein comprising the isolated fragment of Claim 114.
- 119. The fusion protein of Claim 118 which further comprises GST.